Brazil's Railroad Infrastructure Modernization

We expect to see an increased focus on the expansion and modernization of the railroad infrastructure in Brazil in the coming years. While Brazil has traditionally relied less on railroads for the transport of freight and passengers than other countries, we see this changing due to the Brazilian Government's determination to develop the interior and the fact that certain agricultural products and commodities are best served by rail. We believe that this sector will receive significant levels new investment during the next few years. Opportunities for direct export to Brazil include both new and reconditioned equipment. Opportunities also exist for foreign direct investment in railroads, equipment, maintenance and logistics services. This report focuses on business opportunities for US companies that supply maintenance services and equipment, but should be of interest to all companies in this sector.

Market Overview

Considered to be the best alternative for solving the problems related to heavy haul transportation in Brazil, the privatization of railroads is facing a number of structural barriers that are impeding its development. Difficulties have originated in the model that was adopted for the privatization of the Brazilian railroad network that was based on regional criteria. This model has resulted in railroads with distances that aren't ideal for transport economics. In general, railroads are the most cost-effective when distances vary between 600 and 1,000 km. This is not the case with the privatization model.

The situation of the railroads becomes even more difficult when taking into account the way that road transportation is done in Brazil. Highway freight costs are so low that the railroads cannot compete even on distances greater than 600km.

A countrywide transport model that contains a higher percentage of rail would be better suited for a country with the territory and economic characteristics of Brazil. In the US, a country of comparable size, railroads are responsible for transporting about 38% of cargo. In Brazil this percentage is only about 20%. The solution to this problem will involve the participation of many sectors of the federal government, but key responsibility will fall on the Agencia Nacional dos Transporte Terrestre (ANTT), which was created recently to regulate the use of the highways and railroads.

The high cost of railroad logistics in Brazil is a threat to the competitiveness of the sector and the consequence of poor use of roads. Approximately 150 years after the inauguration of the first Brazilian railroad, the current network has structural problems that limit its capacity and burden its costs. More than 90% of today's rail network was built at the end of the 19th century - and many stretches are no longer fit for the cargo movement of a modern economy. The Revitalization of the Railroads Plan, launched by the Ministry of Transportation in 2004, defines a set of priority measures to resume the development of the sector. In the opinion of the president of the National Association of the Railroad Transporters, Guillermo Laager, one of the solutions for the sector is to give continuity to the plan. "This is a point where government and other interested parties from the railroad sector are in agreement", Laager says.

Market Size

Between 1996 and 2003, Brazil's railroad concessionaires invested R$ 5.5 billion (US$ 2.0 billion) in infrastructure - new technologies, purchase of wagons, locomotives and track maintenance. By 2008 they plan to invest another R$ 7 billion (US$ 2.6 billion). In the past eight years of operation, the sector created 20,000 jobs and the volume of cargo transported increased by 34%, reaching 185 billion tons per useful kilometer (TKU). This formidable figure, however, is still poor in comparison with the performance registered by railroads in countries in which rail enjoys more significant participation such as Russia, Canada, the United States and Australia.

The director of ANTT, Francisco Oliveira Filho, said that the railroad concessionaires that operate Brazil's 12 existing rail networks should record a 25% increase in productivity by 2008.

According to ANTT, the volume of railroad cargo increased 16% in the first semester of 2004. In addition, the volume of funds raised by the sector in 2004 exceeded R$ 2.5 billion (US$ 926 million). The investments between January and July 2004 reached R$ 813 million (US$ 301 million), an increase of 76% in relation to 2003. Oliveira Filho notes that the expansion of cargo transported was still not enough to eliminate the existing distortions of the Brazilian transportation matrix. According to the Ministry of the Transportation, 60% of Brazil's cargo is still transported on highways and only 20% by railroads (2000 statistics).

Brazil's Government offers hope for aid package

The Brazilian freight railroads' recovery rhythm should be stimulated with the package of support announced recently by President Luiz Inacio Lula da Silva. The package foresees the capitalization of Brazil Ferrovia, which is the holding company controller of Ferronorte, Ferroban (former-FEPASA), Novoeste (the old Noroeste do Brasil) and Portofer (branch within the Porto de Santos grounds). The Brazilian National Development Bank (BNDES) is expected to invest R$ 150 million (US$ 55.5 million) in Ferronorte, becoming a partner of the railroad. The objective is to allow the company to continue the modernization of the Northwest of Brazil and gain time to expand the Ferronorte, a major railroad used for the transportation of soybean for export between the Midwest and the Port of Santos in the state of Sao Paulo. A solution for railroad traffic problems to the Port of Santos should be made public soon. Currently there are considerable bottlenecks, since Santos is the largest port in Brazil and exports have risen dramatically.

Presently the railroad concessionaires are better off financially when compared with two years ago. Recently, America Latina Logistica (ALL) successfully went public and plans to do another issue. ALL recently purchased 65 new locomotives from the US. It is anticipated that this new equipment will increase ALL's operating capacity by 40%.

The concessionaires are currently in negotiations with private partners for up to R$ 3 billion (US$ 1.1 billion) in investment and are only waiting for the federal regulations on Public Private Partnerships (PPPs) to be approved in order to start these projects. However, the PPPs, which have been presented by the Brazilian Government as the solution for lack of public resources, do not inspire the industry. While PPPs are important, they remain poorly defined with regards to their rules and regulations.

This subject was discussed during the Business on Track show, in São Paulo, a major annual event sponsored by Railroad Magazine. At the event, the concessionaires and the Compania Vale do Rio Doce (controller of three railroads) announced their business plans for 2005.

To confront the lack of efficient cargo transportation, and believing that railroads offer advantages over highways, the federal government has determined that it will focus once more on railroad transportation, facilitating loans to the concessionaires, with lower interests rates and longer repayment terms.

The revitalization of the Brazilian railroad system requires substantial private sector investment and offers substantial opportunities to US exporters. Note that the modernization of the railroad sector will not depend entirely on funds from the public budget, only R$ 860 million (US$ 319 million) will come from BNDES. There is no doubt that it is necessary to strengthen rail transportation in order to adjust to Brazil's ongoing export boom.

According to sector analysts, in the next three years the railroads will have to buy 14,000 new wagons and remodel another 5,000. The current fleet of 60,000 is too small to even take care of current demand. The demand for transportation of grain alone would justify such a priority. It has simply become impossible to ignore the fact that railway tracks are badly maintained (lacking in preventive maintenance) and rolling stock is not available.

More than R$ 12 billion (US$ 4.5 billion) would have to be invested in the next five years in infrastructure by the railroad companies (new permanent way maintenance and management technologies, purchase of wagons, locomotives) in order to make the system reliable and to attend to current demand.

Of this total, R$ 5 billion (US$ 1.8 billion) might come from the public coffers, R$ 2 billion (US$741 million) from rebates of lease payment to government for railroad equipment and R$ 3 billion (US$1.1 billion) from other taxes levied by the government for that purpose.

Business Opportunities for US Companies

Brazil's railroad companies want to invest in the expansion of the railroad network and increase productivity. One of the alternatives they see is to build railroads that can support a greater volume of cargo with lower operational costs. Permanent ways preventive maintenance is a critical issue to cut down on operational cost of downtime, to reduce accidents, and to improve efficiency. Concession agreements stipulate that operators are required to effect a gradual reduction of railroad accidents. This is where US suppliers of maintenance and safety equipment to this sector have an exceptional opportunity.

During a recent seminar organized by the US Commercial Service in Belo Horizonte, Brazil, US equipment manufacturers had an opportunity to show some of the latest technology for permanent ways maintenance. Some of the participating US companies were able to sell maintenance equipment worth several million dollars.

Modern railway preventive maintenance in Brazil is almost non-existent. Most of it is still done manually with work-gangs as it was in the past. For instance, ballast cleaning task that currently takes weeks (and results in considerable downtime) could be done by modern equipment in hours.

Railroad track inspection technology that provides engineering managers with accurate and reliable information about the condition of the track structure and its principal components is rarely used. This technology, which continues to be a major area of improvement within the industry, allows railroad managers to examine the condition of their track structure in a quantitative manner, thus allowing for the setting of safety and maintenance thresholds, and the identification of locations where those thresholds are exceeded.

The new technology used in the new generation of high-speed automated track inspection systems that monitor, measure, and record the condition of the track would be of great value to the Brazilian railroad industry. These inspection systems address virtually all of the key parts of the track structure, the rails, the ballast (and sub grade) as well as the overall condition of the track itself. The cost of it could be minimized through leasing or even by sharing the equipment by the different companies.

Current standards for assessing the safety of existing US railroads have centered on the inspection of track geometry, often with the use of an automated track geometry vehicle. Track geometry measurements, such as gage, surface, alignment, cross-level, and twist, are routinely collected and compared with predefined individual parameter limits which have been set to ensure safe conditions of the track, based on the operating speed of certain rail vehicles. The creation of a service company in Brazil to provide these services should have an economic appeal that would be worthwhile analyzing. A number of opportunities are open for international companies interested in supplying a growing demand for railroad services and equipment. The concession agreements require that the concessionaires provide maintenance services and become far more oriented to safety.

Operational Safety

Accident rates between January and December 2003 diminished by 18% in comparison to the same period in 2002. This result represents the gradual reduction of accidents due to the implementation of a set of actions carried out by the railroad operators and concessionaires, being implemented through investment programs that prioritize the maintenance of the permanent way and the rolling stock, as well as operational staff training.

The following table shows the average accident reduction by Concessionaire.

Source: ANTT – National Ground Transportation Agency

Annual Train Accident Index
No. of Accidents / million km traveled

Concessionaires	2002	2003
ALL – América Latina Logística Do Brasil S.A.	23.4	18.6
FERROESTE – Estrada de Ferro Paraná Oeste S.A.	6.4	2.5
Ferrovia Tereza Cristina S.A.	13.4	12.8
FERROBAN – Ferrovias Bandeirantes S.A.	42.0	27.2
FERRONORTE S.A. – Ferrovias Norte Brasil	19.3	6.9
Ferrovia Novoeste S.A.	124.6	151.3
Ferrovia Centro-Atlântica S.A.	77.8	66.5
CVRD – Estrada de Ferro Vitória a Minas	24.8	14.8
MRS Logística S.A.	25.3	22.7
Companhia Ferroviária do Nordeste	284.3	306.7
CVRD – Estrada de Ferro	12.8	5.9
TOTAL	43.6	35.7

The most dramatic reductions occurred with FERRONORTE S.A. –Ferrovia Norte Brasil (64%), FERROESTE - Estrada de Ferro Paraná Oeste S.A. (62) and Estrada de Ferro Carajás (54%).

On Going Projects

Project: Ferronorte Expansion
The expansion project involves the two phases – Alto Araguai – Rondonopolis and the section between Rondonopolis and Cuiaba. The first phase in progress will have 270 Km. and should increase Ferronorte's cargo capacity to 12 million useful tons - TKU
Cost: the section Alto do Araguaia – Rondonopolis is estimated at R$ 500 million (US$ 185 million)
Companies involved: N/A
Work Begins: end of 2004
Work Ends: end of 2008

Project: Ferroban's Operational Capacity Increase
Brasil Ferrovias is investing to increase operation track capacity, speed and operational security at the Rubineia-Pereque line in the state of São Paulo. The project involves replacing 210 km of rail, recasting 54 km, replacing 129,000 railway tiles, 644,000 rail settlings, rail maintenance and remodeling, and replacing 16 track changing devices.
Cost: N/A
Companies involved: N/A
Work Begins: beginning of 2004
Work Ends: N/A

Novoeste's Track recovery Program
Brasil Ferrovias is implementing a program to improve a rail operation along its entire track extension. The objective is to increases traffic speed, eliminate fuel transportation restriction during the night and to increase operational safety.
Cost: N/A
Companies involved: Cargill Agricola, BR Distribuidora and Companhia Vale do Rio Doce.

Norte-Sul Railroad Construction
The railroad when completed should link the North, Northeast, South and Southeast regions of Brazil though the railroads Ferrovia Carajas, Centro-Atlantica, Ferroban and Sul Atlantic. The rairoad Ferrovia Norte-Sul is expected to transport 12,4 million tons of freight when done.
Cost: US$ 78 million
Companies involved: SPA Engenharia and Construcoes e Comercio Camargo Correa.

Tereza Cristina Railroad Recovery
There is a spot recovery project started after the privatization process began. The services include fixing the platforms, ballast renovation and cleaning, tile and rail fixers replacement throughout its 164 kilometers of tracks.
Cost: US$851,000
Companies involved: Melmetal Construcoes and Comserfer
Work Begins: January 2004
Word Ends: December 2004

All - America Latina Logistica Site Recovery
All plans to change the rail profile along 62 km's of its network. The first phase will cover 46 km and the second phase the remaining 16 km. The project will also include other procedures such as automated ballast cleaning, ultra-sound track inspection and rail polishing.

Cost: US$22 million
Companies involved: N/A
Work Begins: end of 2004
Work Ends: 1st phase: first semester of 2005
2nd phase: second semester of 2005

MRS – Transportation Capacity expansion
The company intends to double its transportation capacity using its 2003 volume as its baseline. The project includes the expansion and construction of several switchyards along the tracks, the duplication of two stretches, replacement of signaling and telecommunication systems, construction of workshops and acquisition of rolling stock.
Companies involved: project is being developed in house with the help of private consultants.
Work Begins: June 2004
Work Ends: December 2009

CFN – Road Remodeling
The Companhia Ferroviaria do Nordeste (CFN) is remodeling the stretch connecting Sao Luis (MA) to Fortaleza (CE)to improve traffic conditions.
Cost: US$ 21 million
Work Begins: November 2004
Work Ends: November 2006

End Users

Brazil has seven major railroad operators, operating 11 branches. The following is a table listing the major concessionaires and their investments up to 2004. The second table provides a breakdown of the investments per category. The source of both tables is Brazil's National Ground Transportation Agency (ANTT).

List of Major Concessionaires and Investments - US$ millions

Concessionaires	1996	1997	1998	1999	2000	2201	2002	2003	2004*	Total
Ferrovia Novoeste	.7	5.1	4.2	3.8	3.8	5.1	3.3	1.2	111.0	138.1
Ferrovia Centro Atlantico	7.0	35.3	34.2	28.0	44.0	71.4	37.5	44.2	150.0	451.8
MRS Logistica	-	62.5	46.7	39.5	51.9	39.9	31.1	42.9	30.0	344.4
Ferrovia Tereza Cristina	-	1.4	1.5	1.9	.8	.6	1.2	1.4	2.0	10.9
ALL – America Latina Logistica	-	34.4	22.8	48.5	40.4	36.3	28.2	28.1	27.0	265.6
Companhia Ferroviaria do Nordeste	-	-	2.5	5.1	3.9	.8	7.3	8.9	74.0	101.2
Estrada de Ferro Vitoria Minas	-	45.1	31.1	23.2	62.2	50.9	63.2	196.5	N/A	472.1
Eetrada de Ferro Carajas	-	18.7	31.2	15.5	37.1	77.9	33.5	57.2	N/A	271.0
Ferrovias Bandeirantes	-	-	-	17.5	47.7	26.0	14.9	2.5	21.0	129.6
Ferrovia Parana	-	.8	.6	3.7	.1	.1	.1	.0	N/A	5.4
Ferronorte	-	-	-	61.5	37.5	74.9	53.1	21.7	N/A	248.6
Total	7.8	203.2	174.7	248.3	329.4	382.4	273.3	404.5	415.0	2,438.7

List of Investments Per Category - US$ millions									
Categories	1996	1997	1998	1999	2000	2001	2002	2003	Total
Rolling Stock	-	65.0	69.3	127.0	161.6	115.3	114.8	228.2	881.2
Infrastructure	-	8.9	19.9	44.6	21.9	57.7	21.3	22.9	226.9
Permanent Ways	-	37.1	56.8	52.6	68.9	155.1	75.7	69.5	593.7
Telecommunications	-	6.0	8.2	6.3	4.3	10.8	6.3	6.2	56.2
Signaling	-	-	-	6.3	10.3	8.6	15.2	18.7	64.0
Repair Shops	-	.6	2.2	2.9	6.7	3.9	3.3	9.9	33.4
Personnel Training	-	.3	.4	.1	1.0	.5	.6	.9	4.4
Road Vehicles	-	-	-	.9	1.2	1.0	1.1	.7	5.4
Other Investments	7.8	85.4	18.0	7.5	53.5	29.4	35.1	47.6	337.8
Total	7.8	203.2	174.8	248.3	329.3	382.4	273.3	404.6	2,023

Market Access

Although Brazil has made substantial progress in reducing traditional border trade barriers (tariffs, import licensing, etc.), tariff rates in many areas remain high and continue to favor locally produced products. Brazil's barriers to trade are a cause for concern for the US Government and the European Union (EU), both of whom continue to work through regional trade accord negotiations and at the WTO level to influence tariff and non-tariff barriers.

This report touches upon a broad range of trade regulations that may affect US companies seeking to export to Brazil. However, due to ongoing negotiations within the Free Trade Agreement of the Americas (FTAA) and Brazil's de facto leadership of the Southern Cone group Mercosul, the information in this report may become quickly dated.

To read more about Trade Regulations, please click on the report below:
http://www.focusbrazil.org.br/ccg/chapters/Trade%20regs.pdf

Other Resources and Key Contacts

- For more information about export opportunities in this sector contact US Commercial Service Trade Specialist Ruy Baptista at:
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- For more reports on this sector in other countries, please visit Export.gov's site for US Commercial Service Market Research Worldwide:
  http://www.export.gov/marketresearch.html
- US Commercial Service in Brazil:
  www.buyusa.gov/brazil
- Brazilian Railroad Association – Associação Nacional de Transportadores Ferroviarios ANTF:
  www.antf.org.br
- Brazilian Ministry of Transportation:
  www.transportes.gov.br
  Agencia Nacional de Transporte Terrestre - ANTT
  www.antt.gov.br
- For more information on selling to Brazil and an overview on Best Prospects for railroad equipment see our Country Commercial Guide:
  www.focusbrazil.org.br/ccg

This report was written by Trade Specialist Ruy Baptista.